Inland Avian Predation

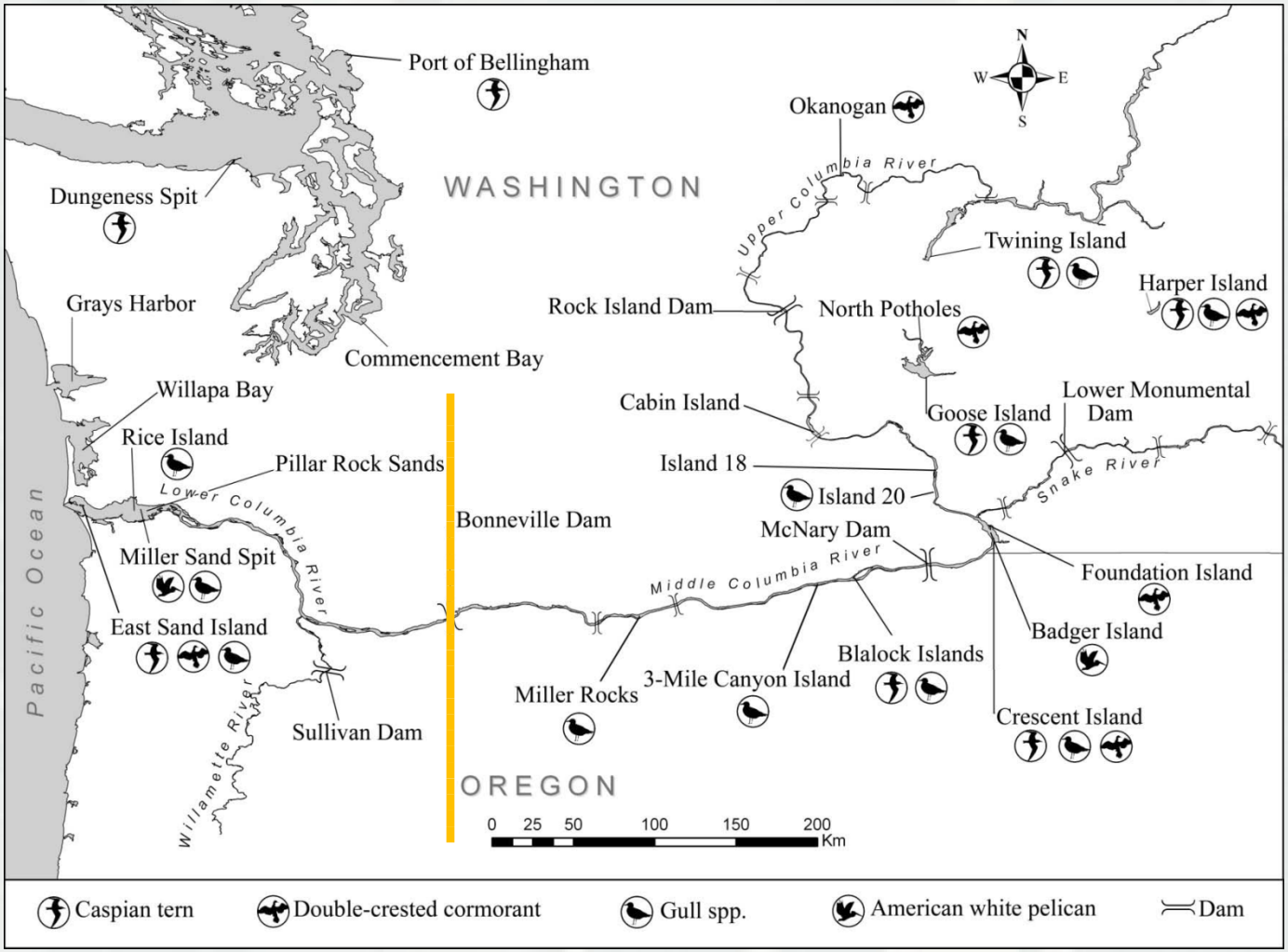
Fish Field Unit

Nathan Zorich

FPOM Avian Update McNary emphasis

September 13, 2012

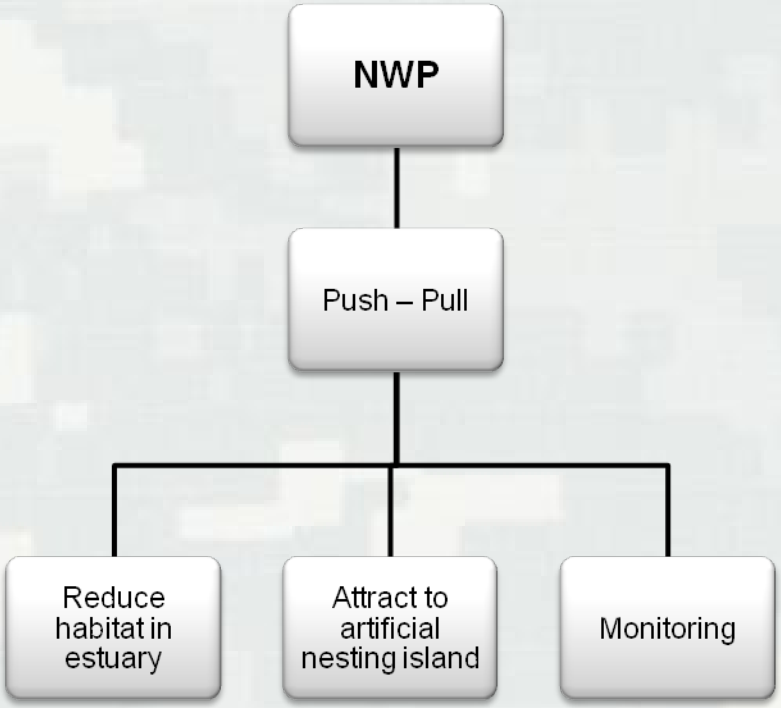
Fish eating bird colonies



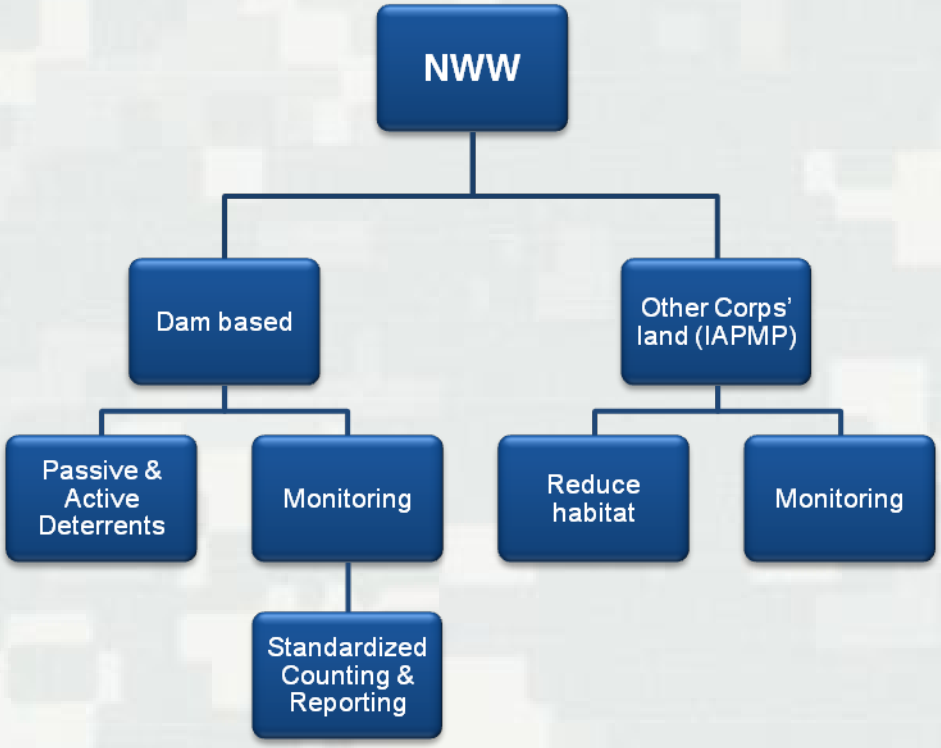
(Roby, Collis et al. 2011)

USACE Avian Management

Estuary



In-land



BiOp requirements

- Smolt survival 96% Spring & 93% Summer
- Inland Avian Reasonable & Prudent Alternatives
  - 47. Manage avian predators on Corps lands
  - 48. Continue deterrents at dams
  - 68. Monitor avian predators & smolt impacts

- Needs
  - Deterrent evaluation
    - Long term monitoring
    - Prioritize avian deterrent spending

Long Term Monitoring: Counts

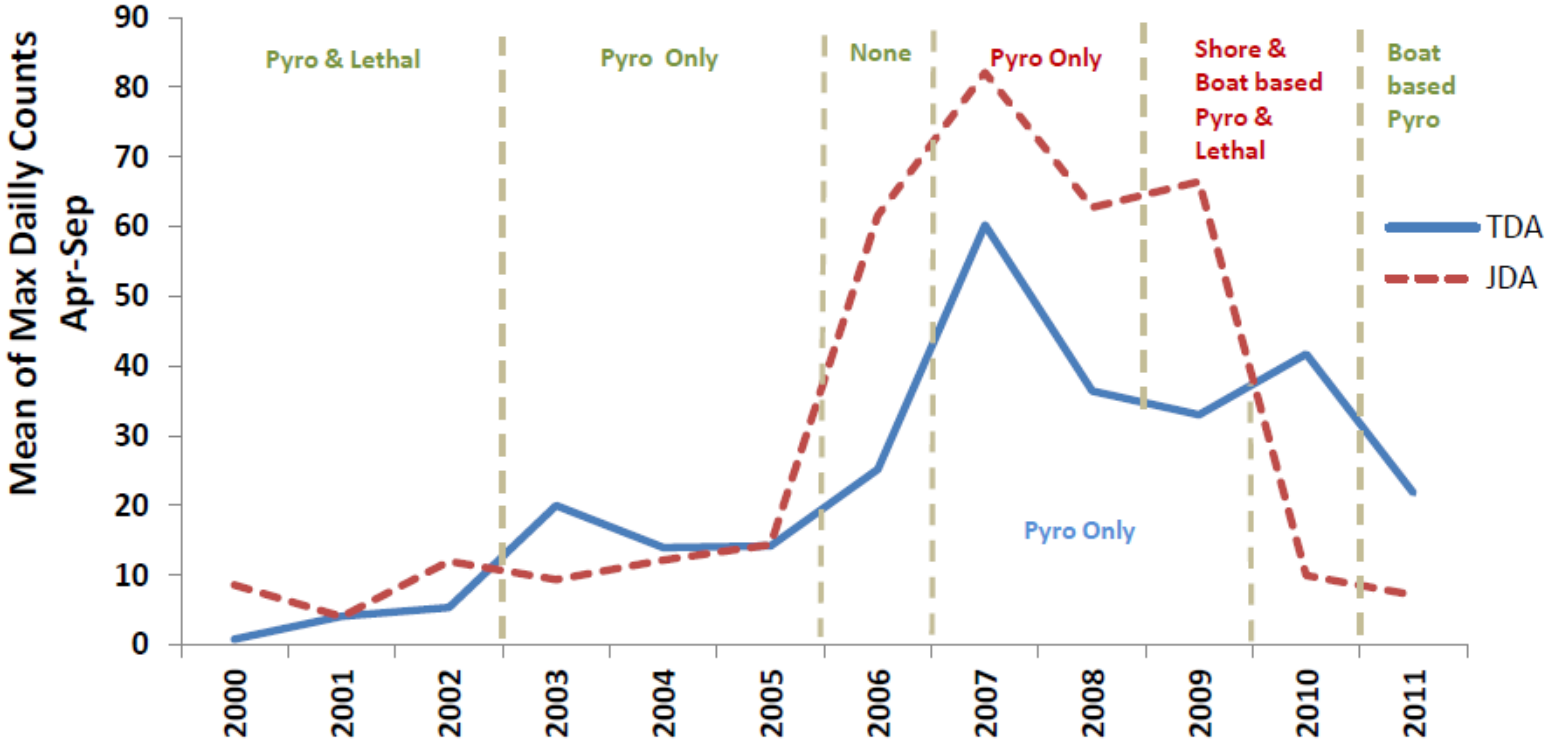
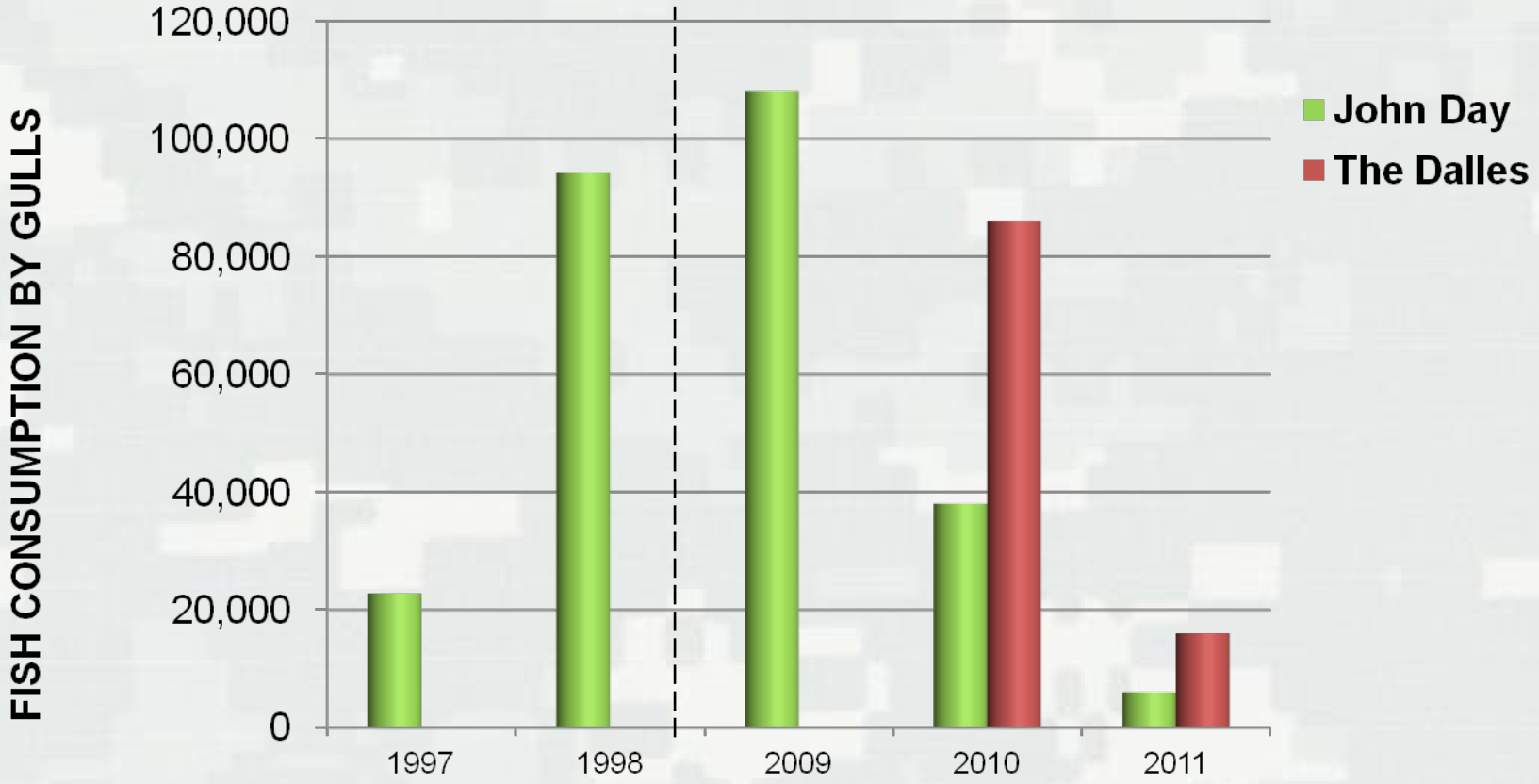


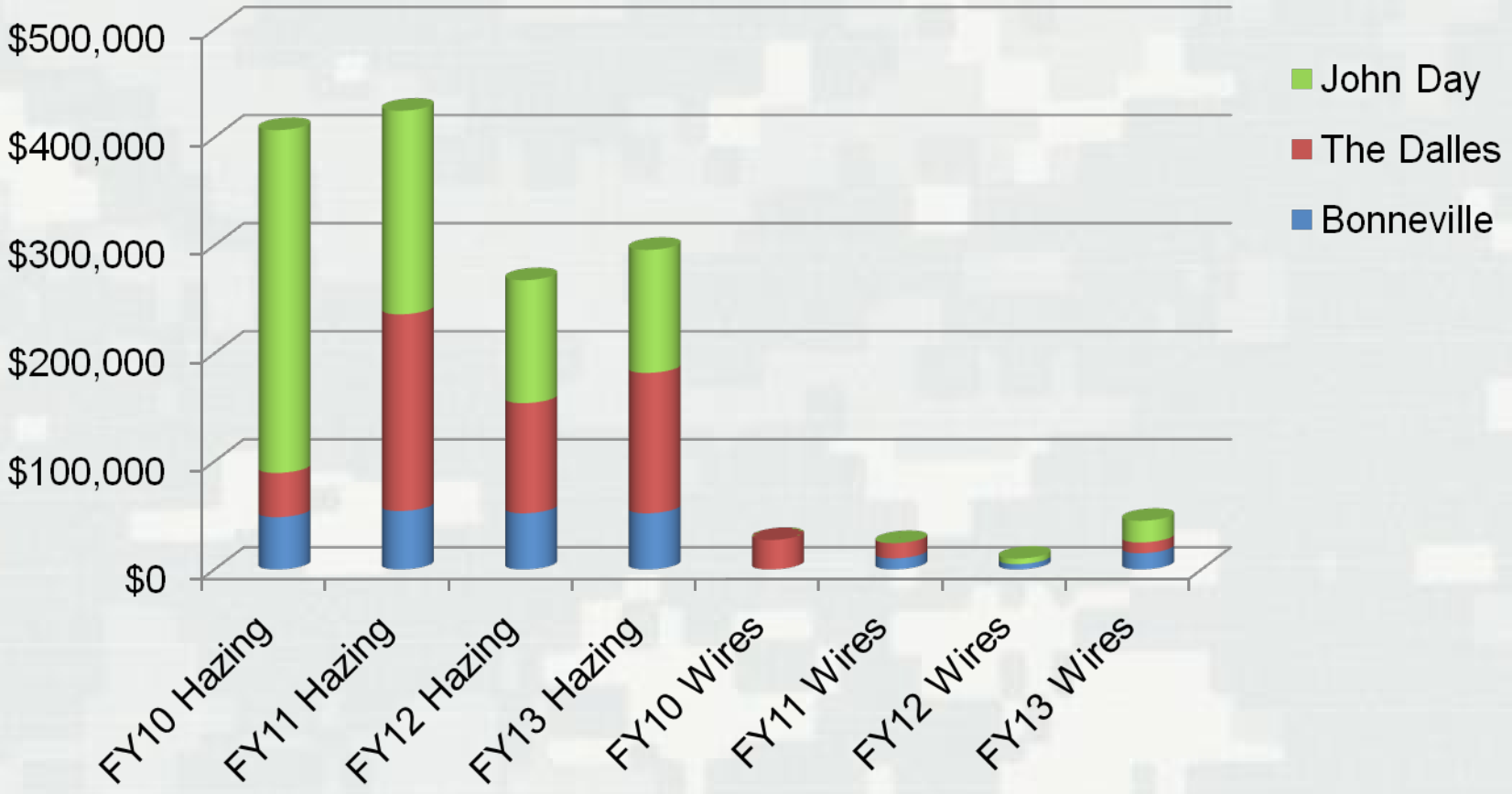
Figure 1. Mean yearly gull counts from maximum daily counts provided by the project biologists from April to September during fishway inspections. TDA is The Dalles and JDA is John Day.

Focused Monitoring : Fish Consumption

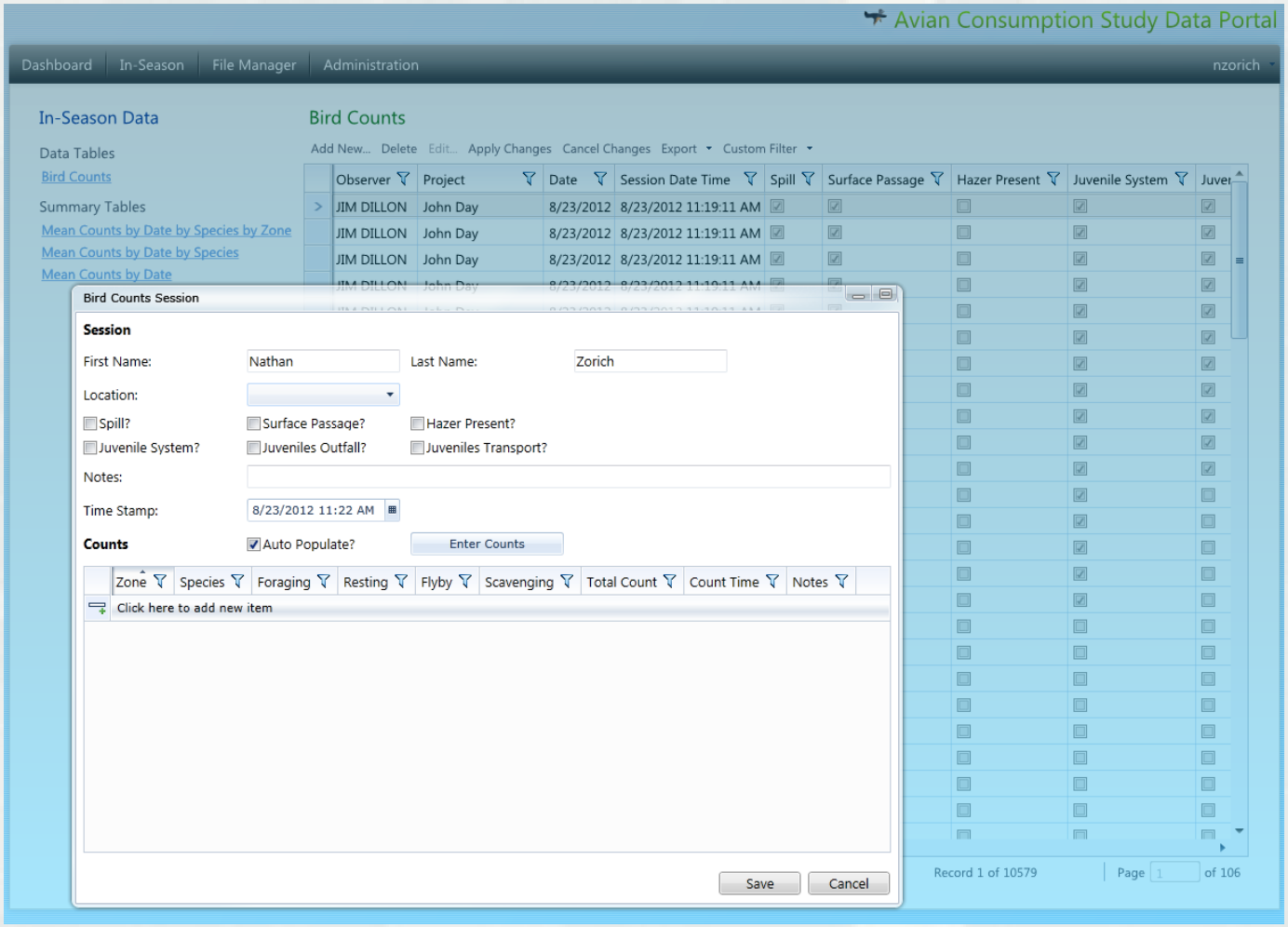


Source: multiple: FFU studies

Deterrent: Funding Hazing

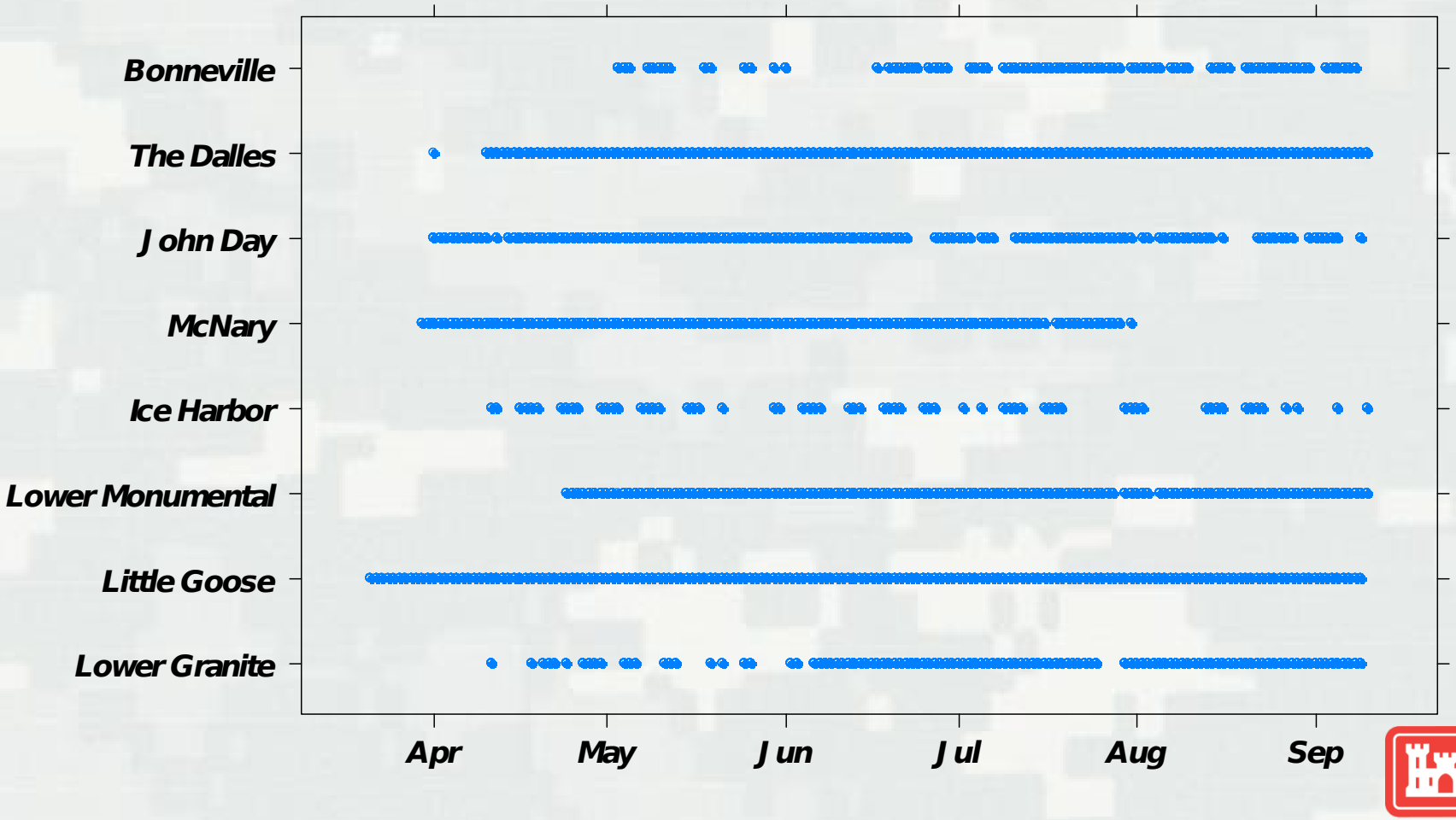


Monitoring: Standardization

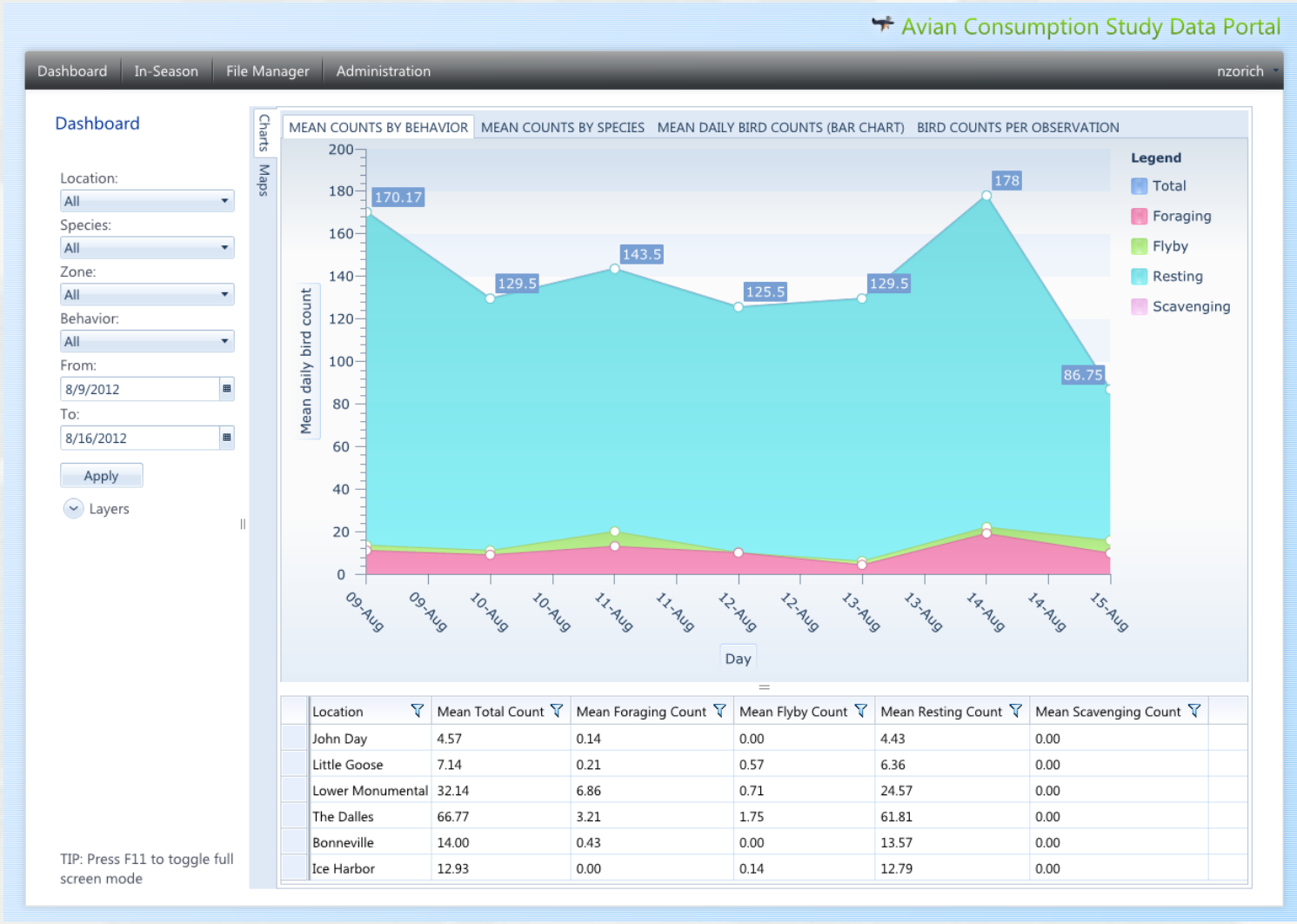


Monitoring: Data collection

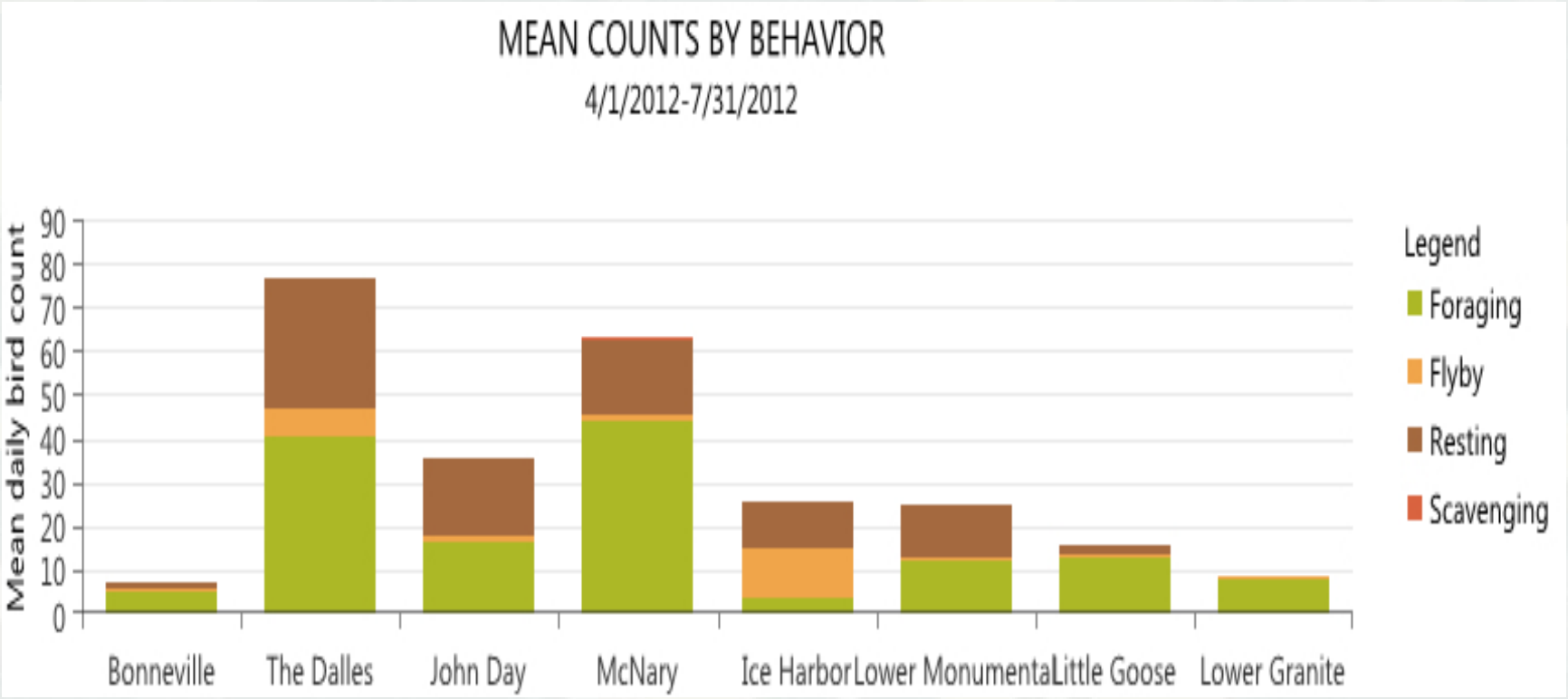
Data entries to On-line Portal
as of 2012-09-11

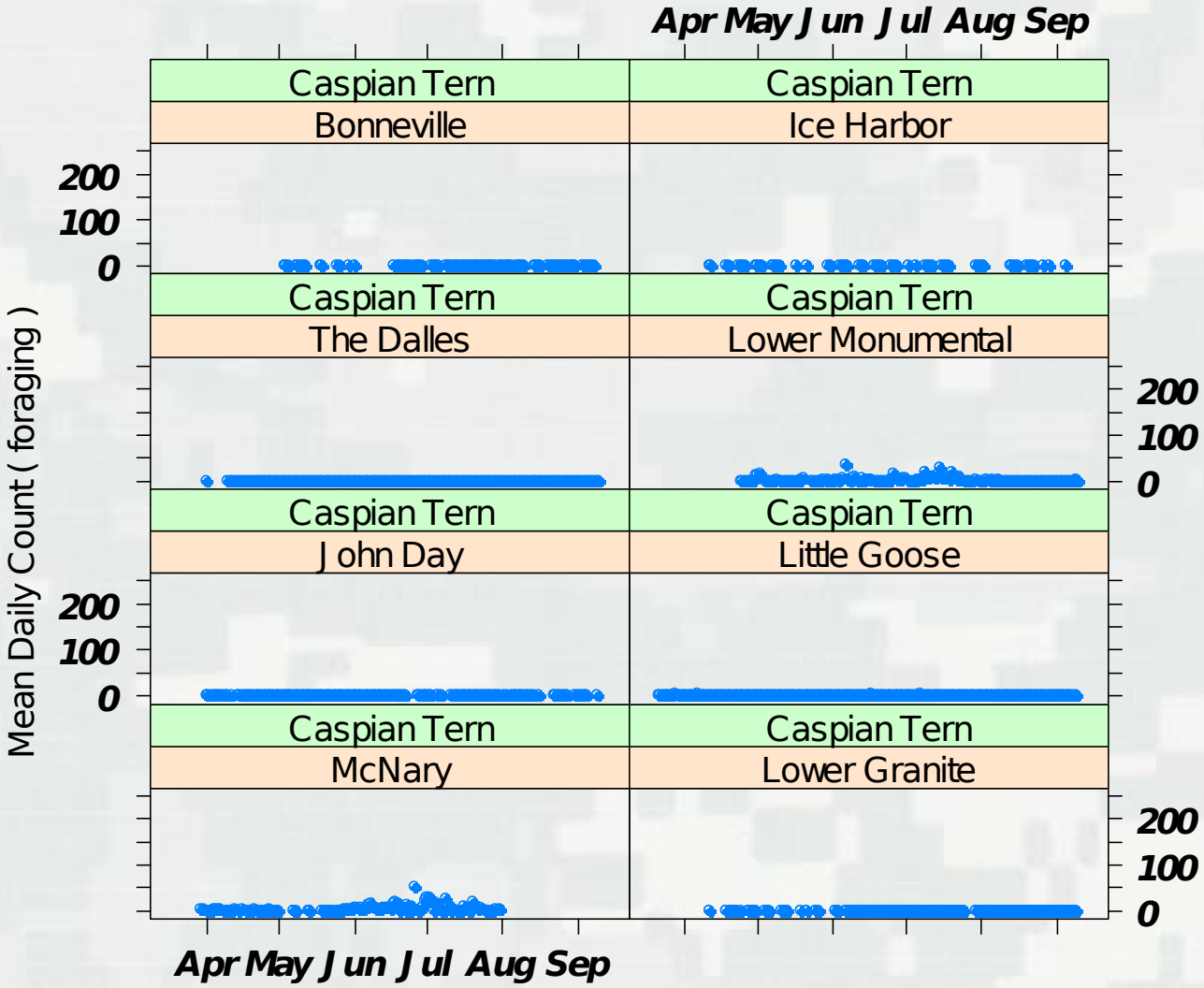


Monitoring: Analysis & Reporting

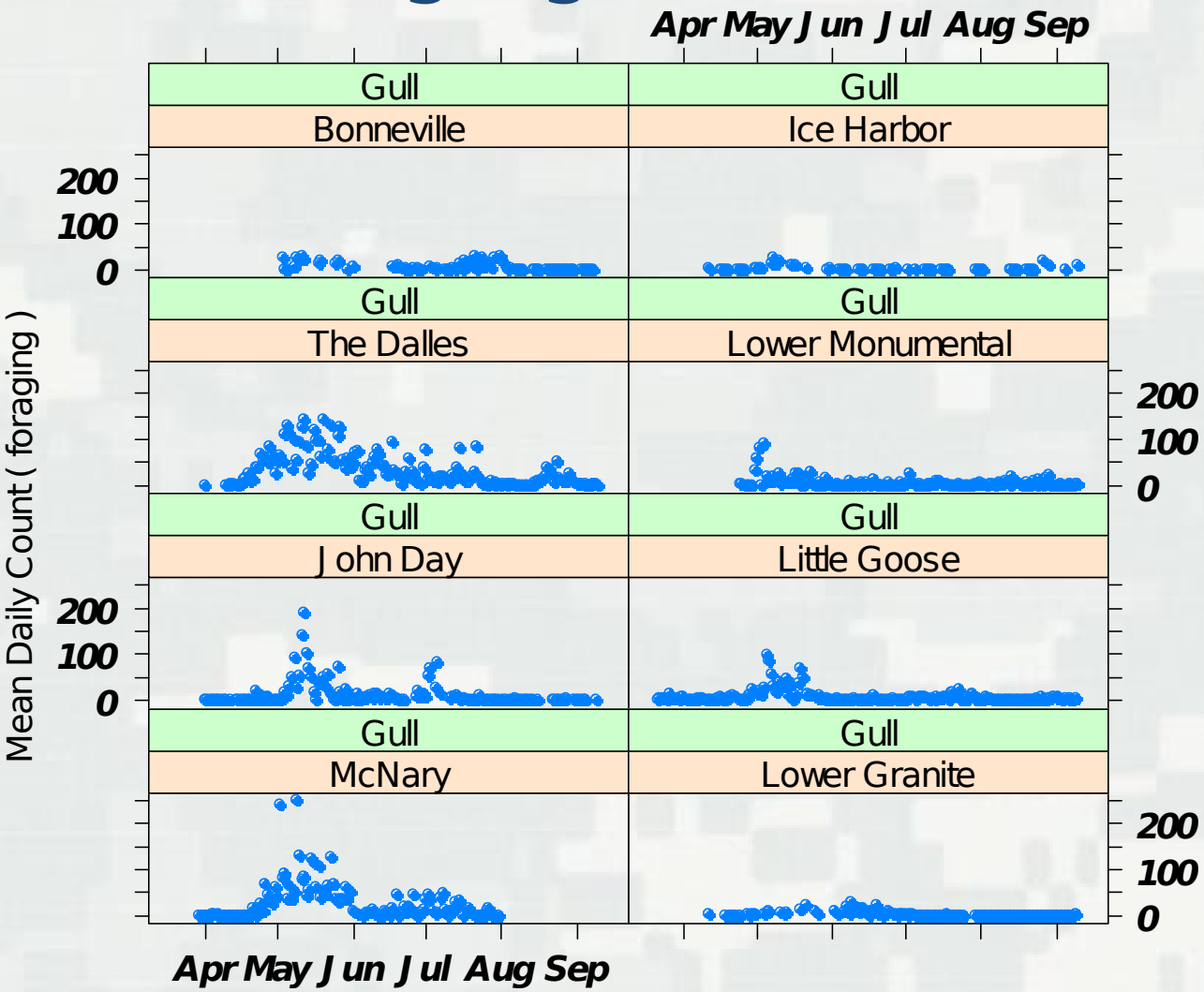


Location	Mean Total Count	Mean Foraging Count	Mean Flyby Count	Mean Resting Count	Mean Scavenging Count
John Day	4.57	0.14	0.00	4.43	0.00
Little Goose	7.14	0.21	0.57	6.36	0.00
Lower Monumental	32.14	6.86	0.71	24.57	0.00
The Dalles	66.77	3.21	1.75	61.81	0.00
Bonneville	14.00	0.43	0.00	13.57	0.00
Ice Harbor	12.93	0.00	0.14	12.79	0.00


MEAN COUNTS BY BEHAVIOR
4/1/2012-7/31/2012
Mean daily bird count
90
80
70
60
50
40
30
20
10
0
Bonneville
The Dalles
John Day
McNary
Ice Harbor
Lower Monumental
Little Goose
Lower Granite
Legend
Foraging
Flyby
Resting
Scavenging

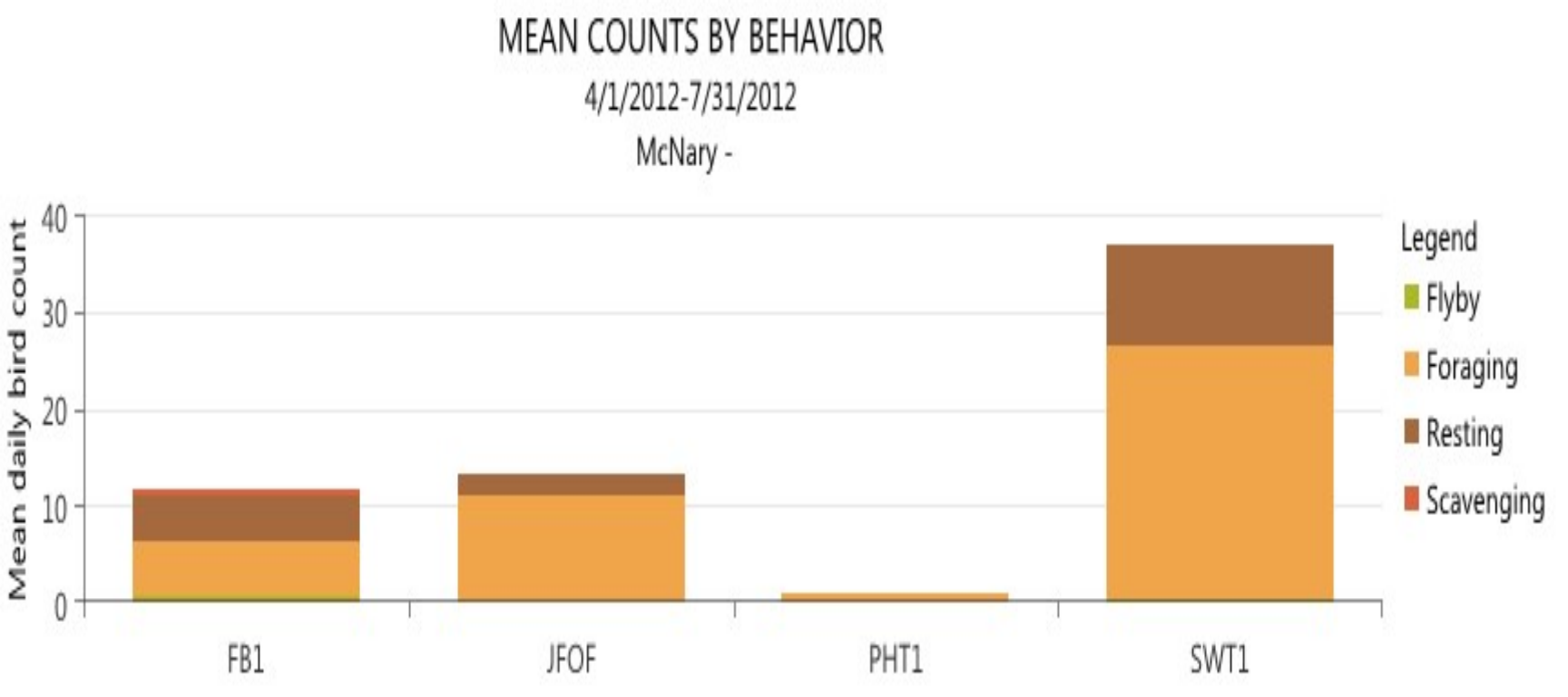

Apr May Jun Jul Aug Sep
Caspian Tern
Bonneville
Caspian Tern
Ice Harbor
Caspian Tern
The Dalles
Caspian Tern
Lower Monumental
Caspian Tern
John Day
Caspian Tern
Little Goose
Caspian Tern
McNary
Caspian Tern
Lower Granite
200
100
0
Mean Daily Count (foraging)
Apr May Jun Jul Aug Sep

Foraging Gulls 2012

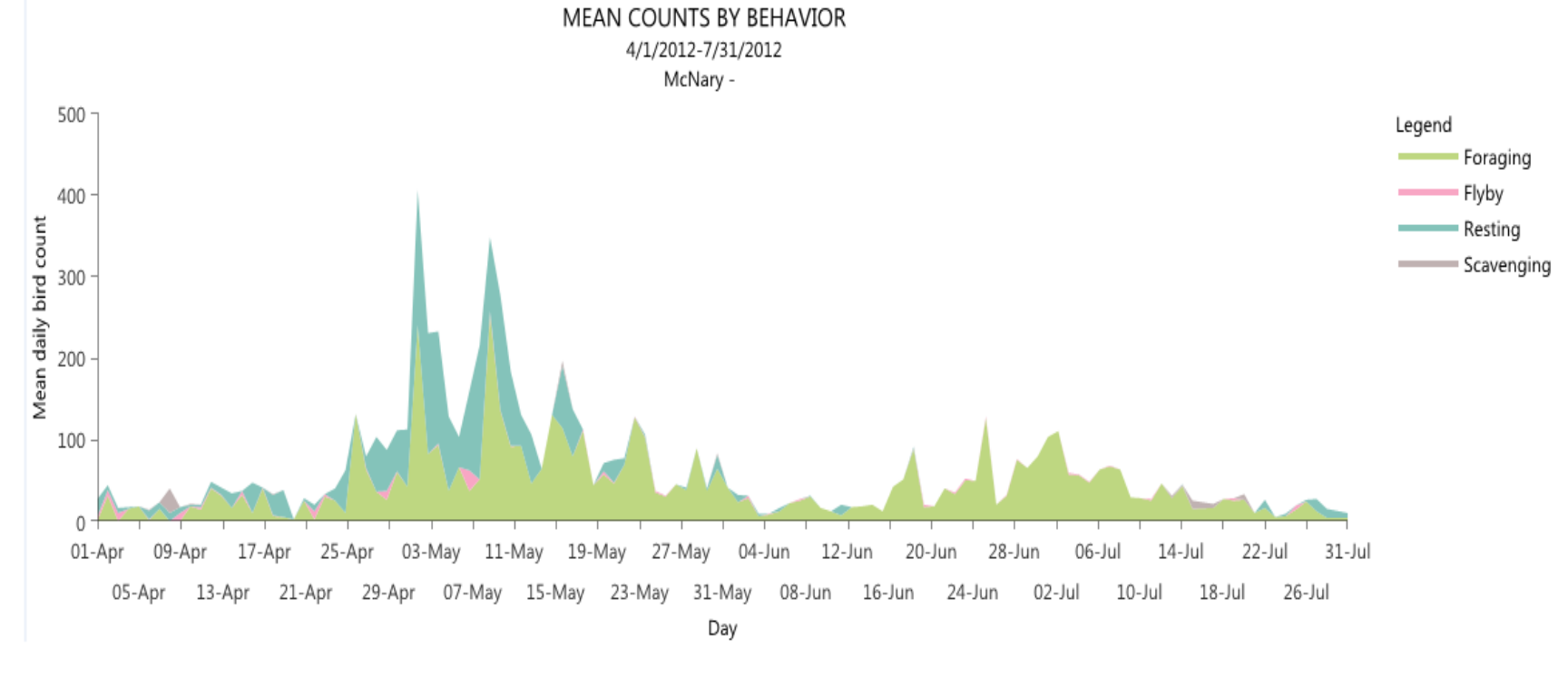


McNary Dam

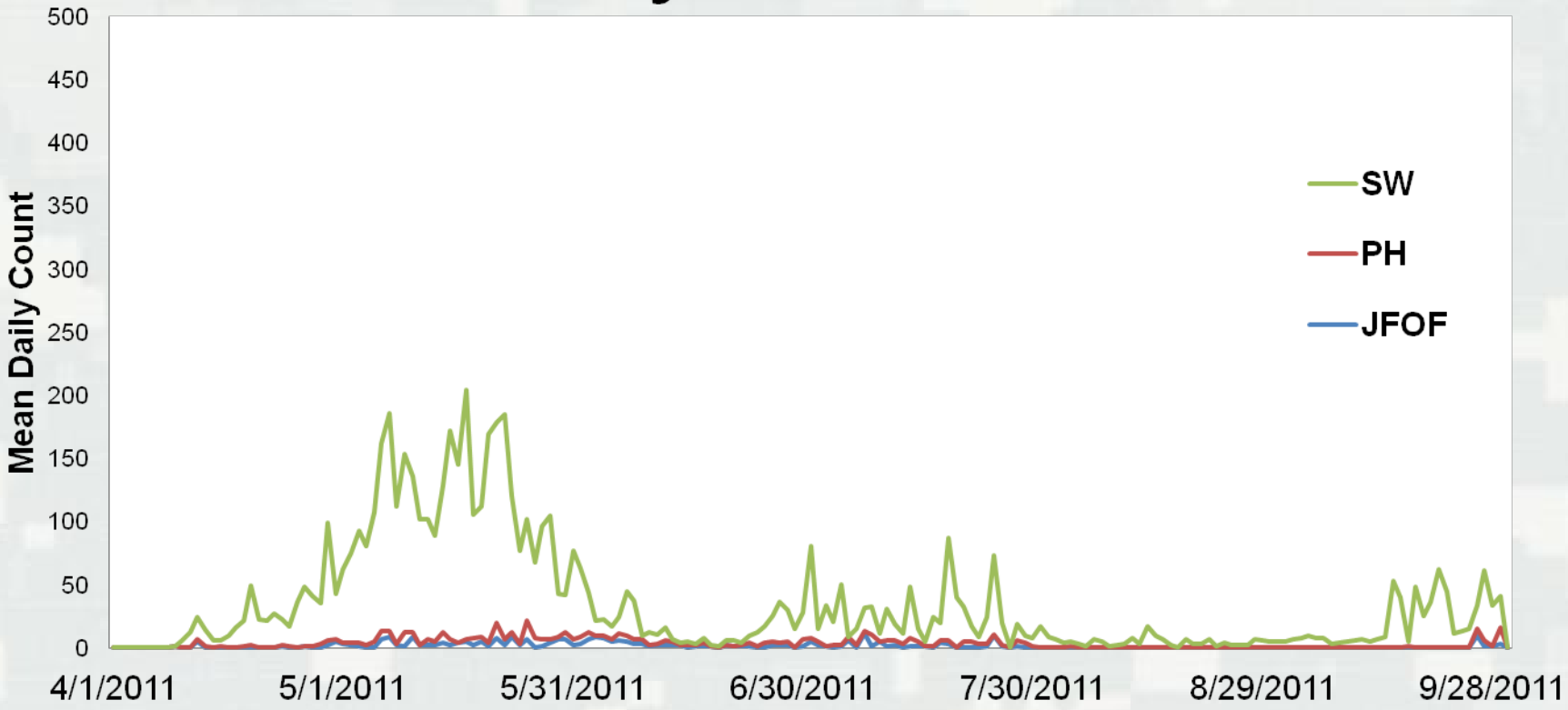
McNary 2012


MEAN COUNTS BY BEHAVIOR
4/1/2012-7/31/2012
McNary -
Mean daily bird count
40
30
20
10
0
FB1
JFOF
PHT1
SWT1
Legend
Flyby
Foraging
Resting
Scavenging

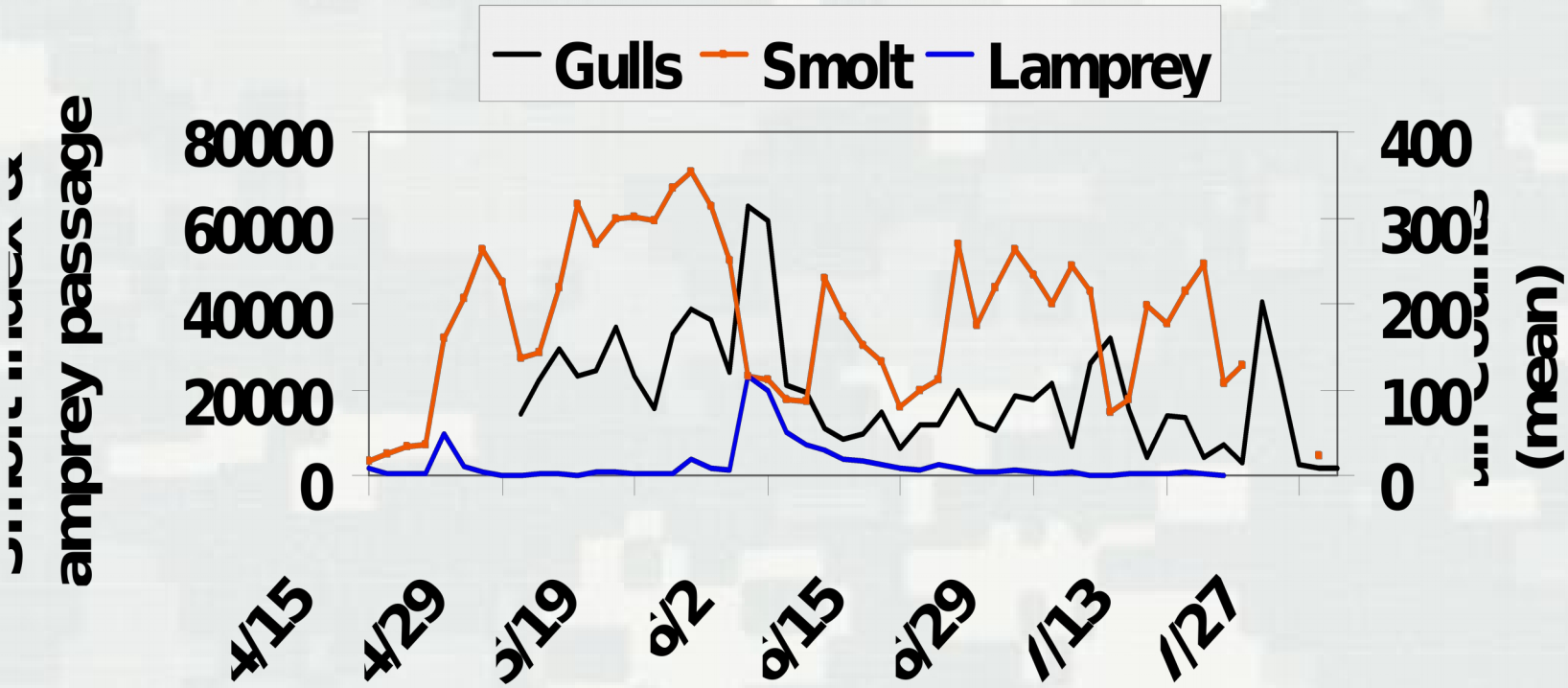
McNary 2012


MEAN COUNTS BY BEHAVIOR
4/1/2012-7/31/2012
McNary -
Mean daily bird count
500
400
300
200
100
0
01-Apr
09-Apr
17-Apr
25-Apr
03-May
11-May
19-May
27-May
04-Jun
12-Jun
20-Jun
28-Jun
06-Jul
14-Jul
22-Jul
31-Jul
05-Apr
13-Apr
21-Apr
29-Apr
07-May
15-May
23-May
31-May
08-Jun
16-Jun
24-Jun
02-Jul
10-Jul
18-Jul
26-Jul
Day
Legend
Foraging
Flyby
Resting
Scavenging

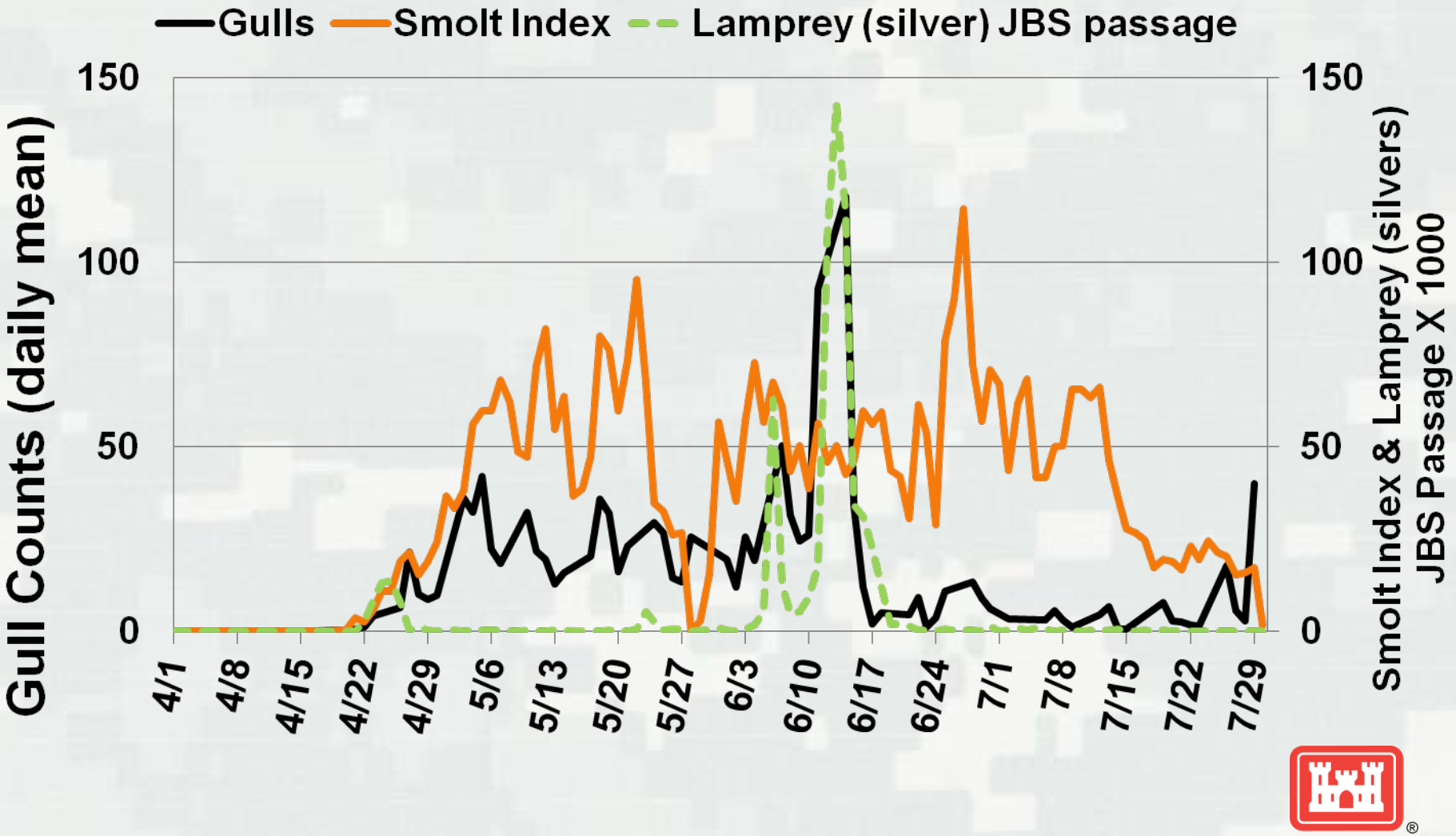
McNary Gulls 2011



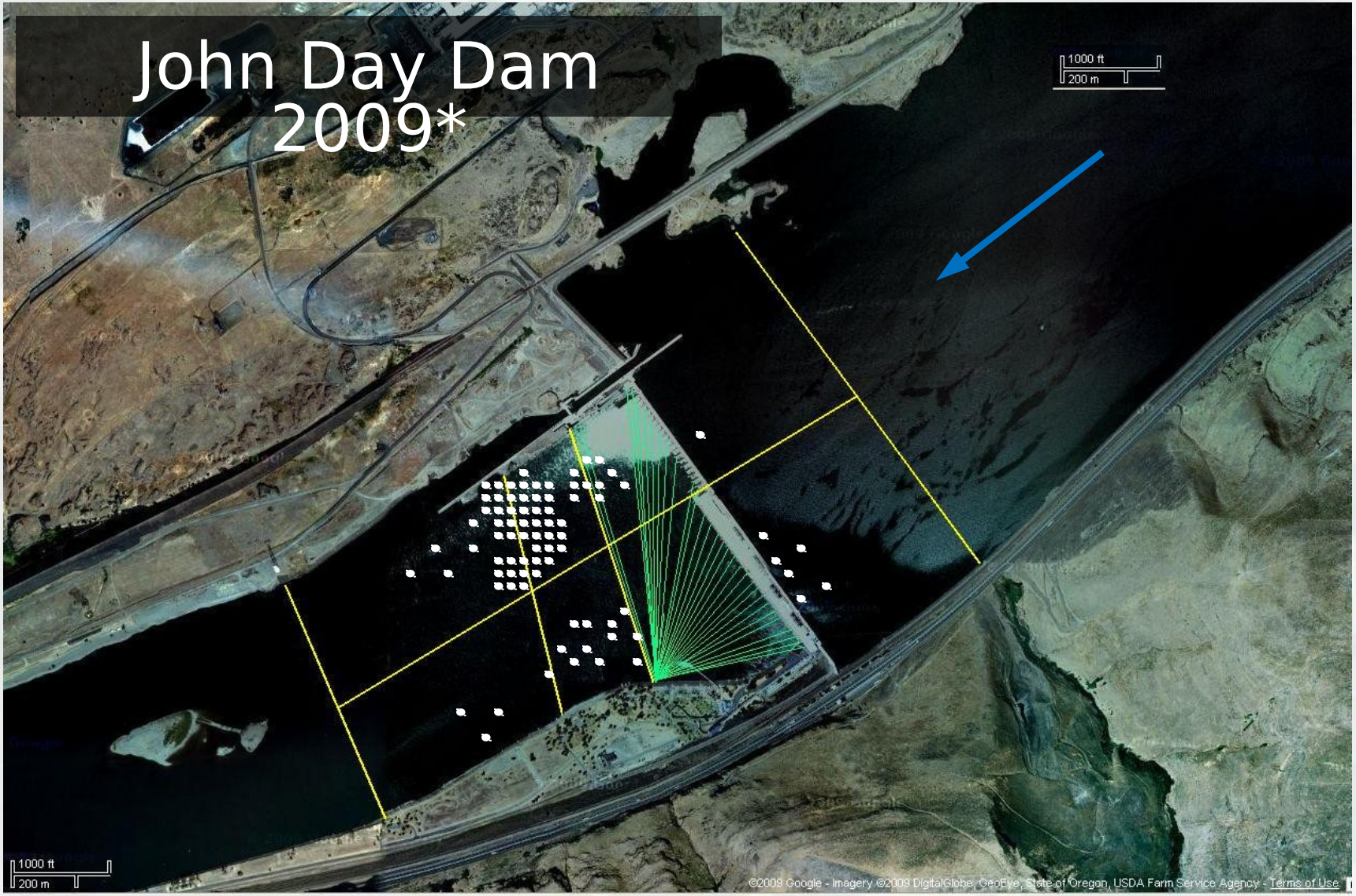
John Day Gulls 2009



John Day Gulls 2010



John Day Dam 2009*


1000 ft
200 m
1000 ft
200 m
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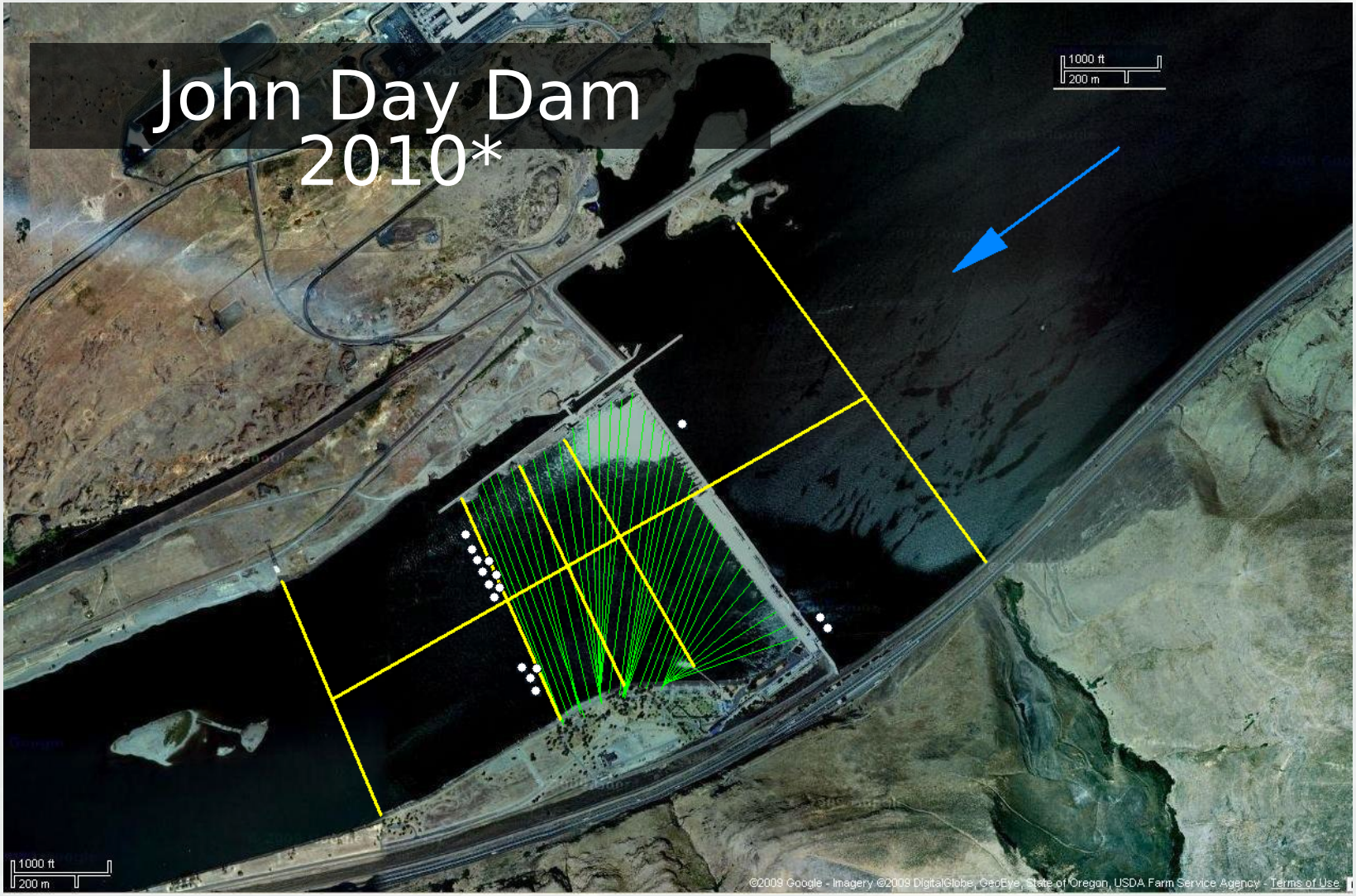
*Daily mean gull count n = 99
One dot = one gull


John Day Dam
2010*
1000 ft
200 m
1000 ft
200 m
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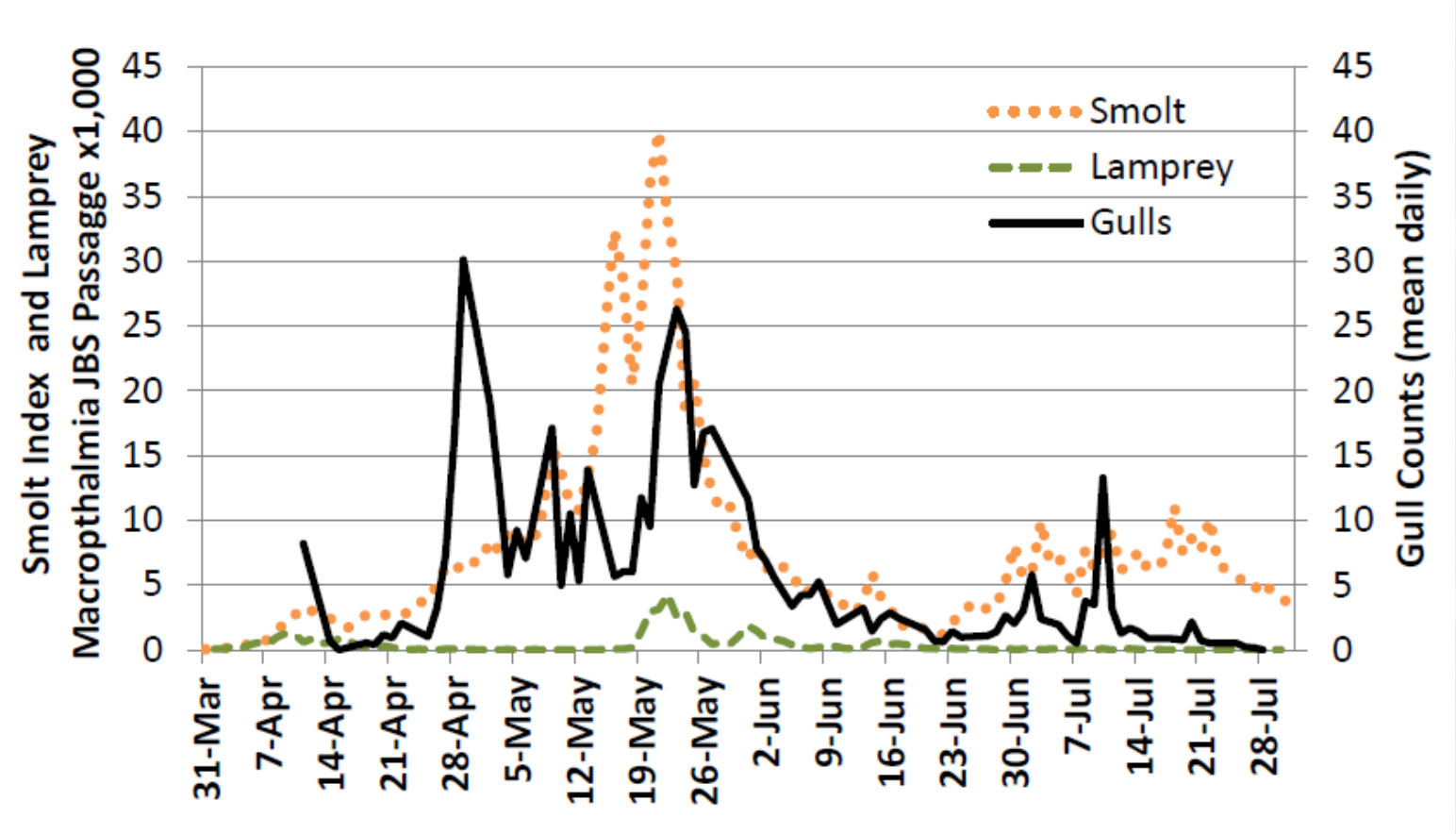
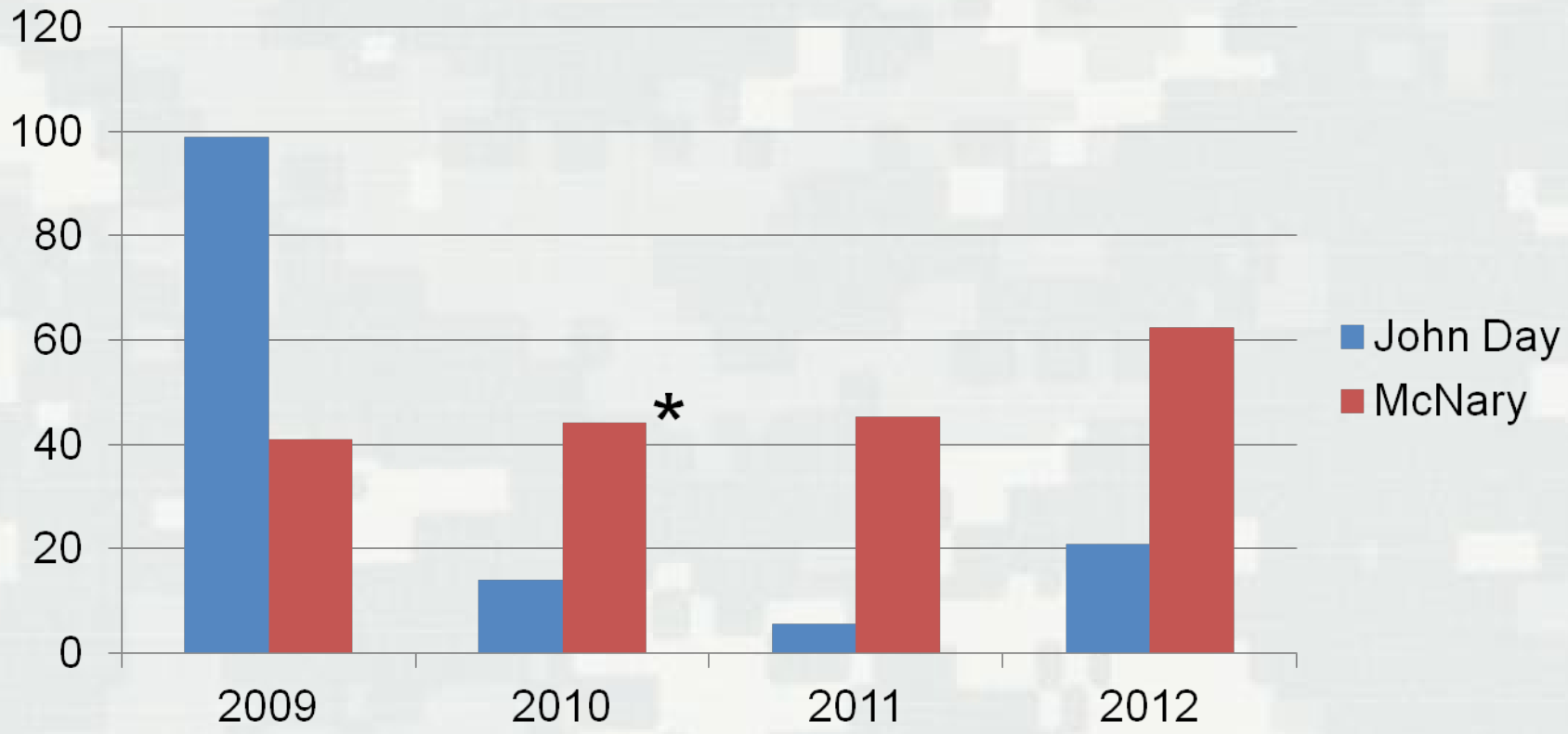
*Daily mean gull count n = 17
One dot = one gull

John Day Gulls 2011



Gull Counts

April – July (foraging gulls / day)



*April – 20 May 2010

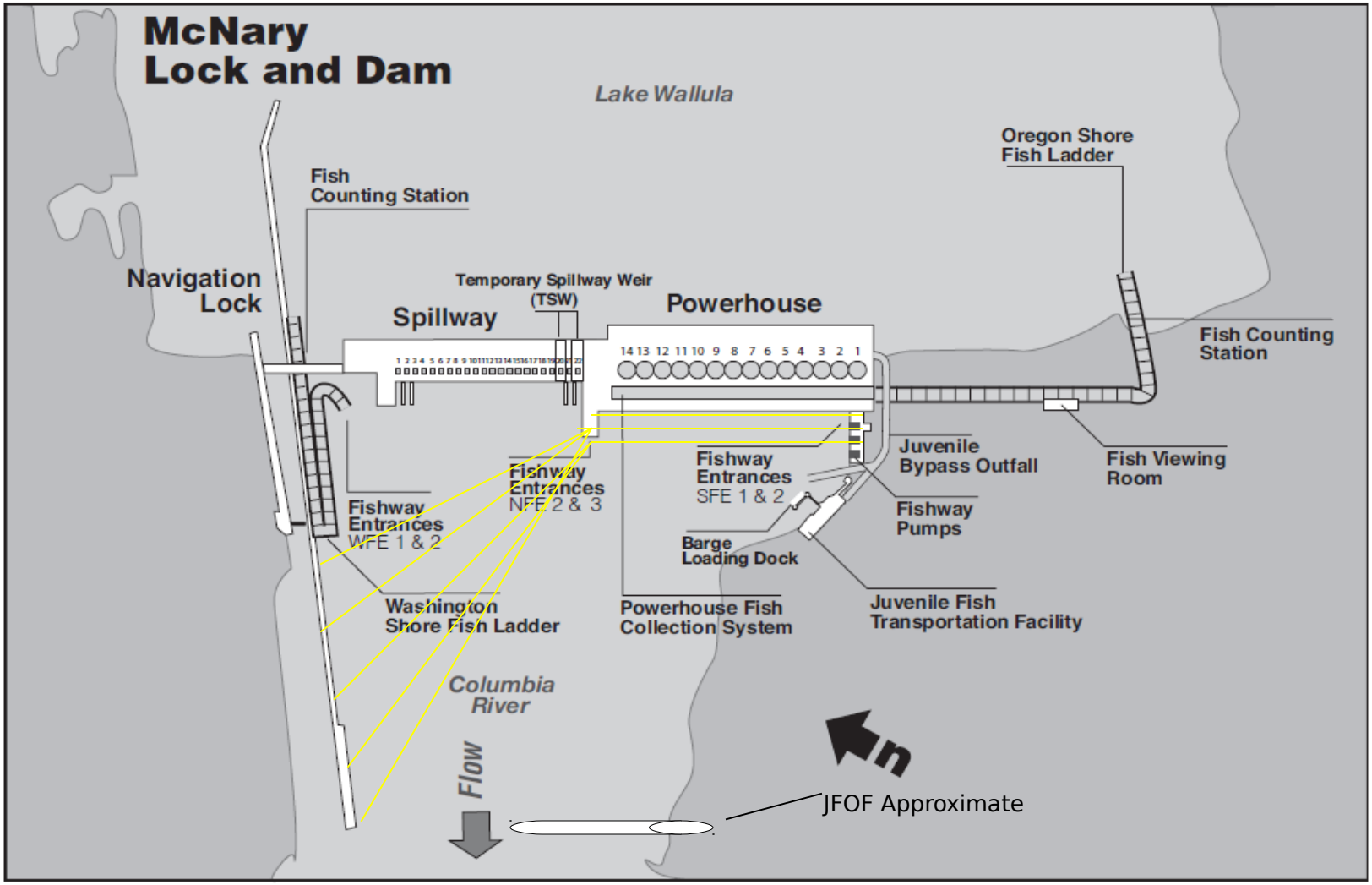


Figure 1. McNary Lock and Dam General Site Plan.

MCN-3

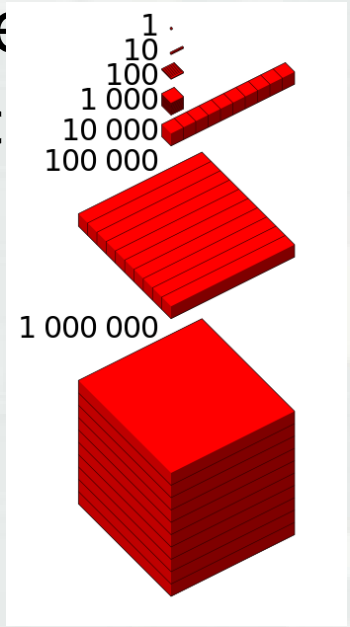
Concerns from Project Biologist

- Region wants current hazing or more
  - Unsustainable under O&M budget forec
  - Benefits hazing vs. political reality?
    - JD Consumption:

    6k (0.02%) of 31 M smolt in 2011

    38k (0.27%) of 40 M smolt in 2010

    (Zorich et al. 2011)



- Maintenance cost of extensive line array JD
  - $6 M to build, 125 synthetic lines 3,000 ft. long
  - Maintenance will increase as lines age and fail